

CLAIMS

1. A recentering device for a rotor shaft (1) for
recentering a rotor shaft relative to the axis X of a
5 stator structure (3) in the event of decoupling caused by
excessive imbalance, said shaft, in normal operating
conditions, lying on the axis X and being radially
supported by a bearing support (5) that is disposed in a
bore of axis X in said stator structure (3), said bearing
10 support (5) having an outside diameter that is smaller
than the diameter of said bore, in order to enable said
bearing support to orbit about the axis X in the event of
decoupling, said bearing support (5) being connected to
the stator structure (3) by radially fusible elements
15 (6), said device comprising means for recentering the
bearing support after decoupling,
said recentering device being characterized by the
fact that the recentering means of the bearing support
(5) comprise means (10) for generating a movement in
20 precession P by said bearing support (5) in the direction
contrary to the direction of its orbits traveled after
decoupling, and a plurality of devices (20) for
decreasing the permitted clearance of said bearing
support (5) relative to the axis X, said devices for
25 decreasing clearance being arranged regularly around the
axes (X, 11) of the two parts constituted by the stator
structure (3) and the bearing support (5), and each part
including a first ramp (21) that is provided on one of
said two parts and a protuberance (22) provided on the
30 other of said two parts, said protuberance (22) being, in
normal operating conditions, radially spaced apart apart
from said first ramp (21) and capable of coming into
contact with said first ramp during the movement in
precession P of said bearing support (5).

2. A device according to claim 1, characterized by the fact that all the protuberances (22) are capable of being in contact with the first ramps (21) at the same time.

5 3. A device according to claim 1 or claim 2, characterized by the fact that the first ramp (21) has the profile of an involute to a circle, and two adjacent first ramps are connected by a radial shoulder (23).

10 4. A device according to claim 3, characterized by the fact that the first ramp (21) has the profile of an Archimedes spiral.

15 5. A device according to any one of claims 1 to 4, characterized by the fact that the protuberances (22) are made in the form of blocks.

20 6. A device according to any one of claims 1 to 4, characterized by the fact that the protuberance (22) is formed by an end portion of a second ramp (21), said second ramp having a profile similar to the profile of the first ramp.

25 7. A device according to any one of claims 1 to 6, characterized by the fact that the first ramp (21) and the protuberance (22) are made of metal.

30 8. A device according to claim 7, characterized by the fact that, the protuberance (22) is located, in normal operating conditions, in a position that is radially spaced apart from the associated first ramp (21) by a distance that is greater than the expected radial displacement (JB) of the bearing support (5) during decoupling.

35 9. A device according to claim 6, characterized by the fact that the first ramp (21) is made of elastomer and

the second ramp (24) is made of metal and can roll on the first ramp, without sliding, after decoupling, in order to generate the movement in precession P.

5 10. A device according to any one of claims 1 to 8,
characterized by the fact that the means for generating
the movement in precession (P) comprise an elastomer ring
(10) secured to the stator structure (3), said ring (10)
surrounding the bearing support (5) and being in
10 permanent contact therewith so that the bearing support
(5) can roll without sliding in the bore of said ring
(10) after decoupling.

11. A device according to claim 10, characterized by the
15 fact that said ring (10) in elastomer is disposed in the
bore of the stator structure (3).

12. A device according to claim 10, characterized by the
fact that said ring (10) is rigid and is connected to the
20 stator structure by a flexible metal support (30).

13. A device according to any one of claims 1 to 12,
characterized by the fact that it comprises three first
ramps (21) and three protuberances (22).